

Soundscaping the world with digital tools: The future in retrospect

Göran Folkestad

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Prelude

Even as a child when I started playing the piano, I found it much more fun to try out melodies and small musical pieces of my own, than to play the sheet music of my piano homework.

Throughout, it has been the creation of music that has fascinated me most, experimenting in notes and sounds and forming a musical unity out of small embryos of musical ideas. As a 14-year old I got my first tape recorder. I used it to record one melody line and play or sing another line in harmony, and with the sound-on-sound technique the options were expanded to what I experienced as unlimited, recording the kick of a bass drum with a slipper, the snare drum with a box of matches, the hi-hat with two sheets of sandpaper, to give a few examples.

The starting point of my research was the meeting between my two musical practices: on the one hand (i) in school, as a music teacher in secondary school (senior high school) and a senior lecturer at the University School of Music and Music Education, and on the other hand (ii) outside school, as a musician, composer and recording artist.

After having worked full time as a music teacher for ten years (1974–1984), and playing in different rock, pop and jazz bands in the evenings and on weekends, I took a break as a teacher, and during the years 1984–1987 I worked full time as a composer and as a recording and performing artist. This coincided with an intensive period in the development of music technology and the implementation of this equipment in the music production of recording studios, and in the practice of composition. All

this I observed and experienced at close range. Almost every studio session involved the introduction of new kit or gear, and new ways of working: sequencers and drum machines steered by sync tracks; synthesizers connected via MIDI (Musical Instrument Digital Interface) to create full and rich sounds, and, eventually, computers with compositional software.

Returning to my music teacher practice in 1987, the question was obvious and clear: how could this equipment which had radically changed, not to say revolutionized, the music production in the studios and in the work of composers, be utilized to fulfill my teaching ambitions and the intentions of the Swedish National Curriculum to let the students create music of their own? Or phrased from the perspective of the “academic world”, and as a starting point of my research: what are the effects of the new technology, and what are its options in various educational situations?

In this presentation I will start by giving a brief description of music technology in retrospect, followed by a section summarizing my own research on creative music making and digital tools in school. From that I suggest a conceptual framework, which should help in the analysis and understanding of issues regarding composition and creative music making, in the light of the concepts of *intertextuality*, *the personal inner musical library* and *discourse in music*. The presentation is concluded by a discussion of possible consequences for the view on copyright and publishing royalty as a result of sampling and digital techniques, and the formulation of some questions regarding today's and tomorrow's landscape of music education.

Music technology in retrospect

Through out time, humanity has tried to obtain new ways of expressing musical ideas, and accordingly the boundaries for the possibilities of expression in musical creation have constantly been stretched and expanded. The development of new instruments and other means of musical expression has taken place in a constant dialogue between instrument makers and musicians/composers, the latter continuously putting up new desires and demands of functions and sounds, and the former having made use of all new technical conquests in order to achieve this.

The desire of having access to a wider world of sounds when creating and performing music, than what is offered by a single instrument while playing it, is consequently

an ancient phenomenon. For example, the church organ was developed in order to make it possible for the composer and performer to get access to the sounds of the orchestra, and thus by various registrations create significant sounds for each composition (Davidson, 1991; Johansson, 2008). The development of the organ also made it possible to program various combinations of sounds in advance, in order to be able to change sounds and sound combinations during the performance. The competence of organ players was thus expanded to include mastering the sounding and technical possibilities of different organs, and out of these creating sound registration for the various pieces of music in the performance. In that sense, the function of the church organ could be seen as satisfying needs similar to those that are satisfied today by the synthesizers and the computer soft-ware.

In this way, the development of new instruments and means of musical expression has taken place in parallel with the technical conquests, materials, and ideals in society as a whole, all of which have continuously been tested and adapted to the musical field. In the 20th century, this approach led to the development of what today is called electro-acoustic music, originating from the French composer, author and engineer Pierre Schaeffers' creation of the first electronic music studio in Paris in 1948. This way of creating music, *Musique Concrète*, one of the basic ideas of which is that the technology and the techniques it affords "can be used to manipulate the recorded sounds in a way that mechanical instruments are not capable of" (Wiggen 1971: 80), spread widely in the 1950s, and gave raise to studios for electronic music all over the world. In Cologne, Germany, where the second studio was built at a radio station (WDR) in the early 1950s, a group of technicians and composers developed *Elektronische Musik*. Karlheinz Stockhausen and Michael Koenig are the most well-known composers in that context.

One of the guiding aesthetic principles in electro-acoustic music was the idea of non-pitch related music. This enabled the equipment to be directed by other means than the use of keyboards, on which the keys represent fixed pitches. However, the quickly growing use of music technology in the creation of popular music, from the beginning of the 1970s, placed the development "at a cross-roads. In simple terms, this can be described as a choice between keyboard and not keyboard" (Thorsén, 1991: 4).

The introduction of MIDI (Musical Instrument Digital Interface) in 1983 led to the start of a wide development of new ways of working with music, both in the tradition of electro-acoustic music, and in popular music, such as rock and pop. This system, first developed mainly to make it possible to communicate between synthesizers, soon

opened up various new possibilities for communication among all kinds of digital music equipment and computers, and definitely concluded the discussion in favor of using keyboards to direct the equipment. In the 1980s the equipment of the professionals became every man's property. "Computers, synthesizers, porta studios, etc. became so cheap and widely spread, that these became the natural point of reference in the creation of new music" (Thorsén, 1991: 4). Digital technology, including drum machines, synthesizers, sequencers and other computer based midi-equipment, revolutionized the work of music recording and composition. Work in recording studios and the possibilities for composition and development of arrangements was thereby totally changed, and new ways of working was developed.

This way of working with music, used by many professional composers (Dyndahl, 1995), was soon adopted by the younger generation. Soon there were pupils in every school class with access to music technology at home, using it together with their peers. "Studio recording was no longer confined to the studio, and the home recording studio became financially possible" (Jones 1992: 40).

Digital technology also accelerated the displacement of the competence in the creation of contemporary dance music, a change that started with disc jockeys being engaged by the record companies to produce special disco-mix versions of successful hits for the discotheque dancing floors. Previously, popular music had been created mainly by instrumentally and musically trained and competent musicians and composers, although the role of the recording engineer became increasingly important "in the realization of a composition by deciding what technology should be used and how to use it" (Jones, 1992: 9). Disc jockeys and others were so far consumers of ready-made music. However, the disco-mix versions made by the disc jockeys themselves were the beginning of a development that blossomed when digital music equipment made it possible for them, as well as every other interested creative listener, to fulfill musical ideas of their own. This started a new music culture based on an alternative musical competence, acquired through listening and dancing as social interaction, instead of through instrumental technical skills. As formal musical knowledge and instrumental training were no longer necessary to be able to create music, this new group of music producers could realize their ideas directly, without any middlemen's hands. Thus, an alternative musical competence, based on imagination, ideas, and the mastering of a musical language, sets new standards for the production of youth music.

This setting of new standards thus implied a change in perspective out of which the music is produced, a change from *the perspective of musically professional "producers"*

to the perspective of creative “receivers”. This change might also imply the development of a new aesthetic standard, manifested in many of the tunes, which in traditional musical standards had simple chord sequences and harmonics, repeated melody riffs, quite often pentatonic, and with a heavily marked pulse in the rhythmic. Even the sounds used were a return to what was described by trained musicians as “cheap sounds”, compared with the sound produced on the expensive and advanced synthesizers used by professional musicians. The sounds of a synthesizer was long a question of price; the low price synthesizers sounded a certain way, in contrast to which more expensive synthesizers were technically more advanced, with more lifelike and, from a musician’s perspective, “better sounds”. However, when the new generation of music making youngsters achieved commercial success, they held on to the sound qualities with which they were accustomed in expressing themselves. Thus, that particular sound ideal became a part of the style.

Gradually, the difference between the sounds of amateurs and professionals diminished, and from the 1990s and onwards, in studios producing teenage music, advanced and expensive samplers were sometimes used to sample the sounds of cheap home synthesizers for the production. These sounds can be described as recognizable and characteristic of synthesized sounds, that is, they do not attempt to imitate acoustical instruments, but rather sound electronic and synthetic. The purity of the digital samplers, regarded as a valuable improvement, was complemented, or in some cases replaced, by the rough sounds of the analogue synthesizers.

Another aspect of the changes that the technological development brought about, was the change in the view and function of the recording itself. Originally, the purpose of a recording was to document the music, exactly as it sounded in the recording situation, as “an unaltered acoustical event” (Bruce Swedien, personal communication, 2003). In fact, this idea of faithfulness to the original event is the essence of the concept of *High Fidelity* (Hi-Fi): the stereo equipment is to represent the music, exactly as it sounded at the recording session, with no additions, that is, to show high fidelity to the original. As a result of music technology, the recording more and more became a part in music creation, and today creating and recording are totally integrated. This change towards an almost inverted situation, as compared with the original recordings, was described by Lilliestam (1995) saying that “in live performances of the music, one tries to attain a re-creation of what once was done in the studio – not the reverse” (p. 181).

As seen above, for a long time, from Thomas Edison’s phonograph (1877) and onwards with wax rolls, direct engraving, steel wire and by time with tape and vinyl records,

recording music was a means to document music events of all kinds, both classical and popular music, and thereby making it possible to separate the listening of the music in both time and place from the performance of it.

The development of recording and music production techniques might be summarized in terms of two paths, traditions, or discursive practices:

- (i) *The “Electronic – Artistic path” with its starting point in Musique Concrète and Elektronische Musik and in the post-World War II spirit to remove national characteristics from the music, and to create a new common, internationally united tonal language (Folkestad, 2002). In this project the possibilities of the electronic innovations became a means to accomplish this utopian idea of modernist composers after the war, a tradition that throughout the years has resulted in various kinds of Electro-Acoustic music (EA).*
- (ii) *The “Recording – Production path”, music production with its roots in the recording of popular music, from presenting “an unaltered musical event” to multi-track recording: sound-on-sound (1950); multi-track tape recording (1955); MIDI and synthesizers (1983); computers/sequencer programs (1989); hard disc recording (ProTools)/digital editing (1991); internet, iPads, smartphones, YouTube (2005); the studio as live instrument (2005).*

Today, these paths exist in parallel, both as separated – not the least at Universities and Academies of Music where they quite often are to be found at different departments – but also as merging in artistic projects, film and computer music, etc.

In summary, creative music making using digital tools is today an everyday cultural phenomenon, which engages a considerable proportion of today’s people, in all ages.

Creative music making and digital tools in school

As stated above, the introduction of MIDI in 1983 led to the start of a wide development of new ways of working with music. This development raised many questions for music teachers, still valid in today’s music education discussions and practices, which might be summarized as follows:

(a) How can these tools be used in music education to fulfill the ideas and aims under the heading *musical creation* in the curricula?

(b) Which are the new demands put on music teachers and the music teacher education programs by the fact that almost every piece of music that children and adolescents listen to today, in one way or another is produced using this equipment? And what are the possibilities implied?

(c) Is it the ways in which professional composers use the equipment that should be applied in an educational context, or should other methods be developed?

In the school context, music teachers as well as researchers started to experiment by using music technology in classroom teaching.

In order to get a general view of the state of the art in Sweden by the second half of the 1980s, I carried out a study investigating how digital music equipment was used in classroom teaching, and upon what ideas the teachers based their usage and testing (Folkestad, 1989). An illustration of the rapid development within this area is that when I planned the interviews for this study, I had problems in finding four people (!) in the whole of Sweden working with music technology in their teaching.

The result showed that the activities carried out with music technology by the end of the 1980s could be divided into two main categories:

1. Established activities: activities with a content that the teacher had carried out previously with other equipment, other instruments, or other methods, and in which music technology was now used as a tool to achieve those ends. Most teachers thought they had renewed their teaching in this way, making it more effective or more inviting and therefore easier to motivate to the pupils.

2. New activities: activities completely or partially new and unique, in which the music technology was intrinsic to achieving the goals and purpose formulated. In these activities the music teachers found it possible to illustrate, practise, create and accomplish musical aims which had hitherto been impossible in music teaching.

Further research focused on one of the activities in the second group: the possibility of letting pupils create and perform music of their own with the help of computers and music technology. In spite of the musical, motor and conceptual limitations of

their previous knowledge, pupils were now much more easily able to *create music of their own* and to instantly hear how it sounded.

Thus, music technology was found to be a valuable tool in realizing creative music making, prescribed in the Swedish National Curriculum, a demand the teachers up to that time had found hard to fulfill.

A theoretical basis for studies in the school context was presented in *The computer and the new music technology in a didactic perspective* (Folkestad, 1991a). The paper refers to the formulations in the Swedish National curriculum and the results of previous research, and points out the importance of focusing on creative activities in school music, and it describes how music technology could be used to promote that work. The result showed that the implementation of IT does not necessarily lead to progress. For example, a striking paradox was that a most modern medium with all its utilities, had been used in some cases to reintroduce one of the most theoretical and abstract activities in music teaching – notation. Hence, the conclusion was that the most important thing is not the implementation of computers as such, but what they are used for.

On the basis of previous research (Folkestad, 1989; Folkestad, 1991a), a study of computer based creative music making was carried out in a secondary school in which 12 year old pupils, within the framework of regular music classes, created music of their own, using synthesizers and sequencers (Folkestad, 1991b). The study, which also served as a pilot project for my PhD study, was carried out over two years, 1988–1990, with a total of 100 pupils (4 classes) working in groups of 3–5. The main focus of the research and evaluation was on the pedagogical and didactic aspects, that is, how the teaching was organized, what kind of previous knowledge the pupils needed, how the tasks and work could be individualized, and the teacher's role in that work.

The results showed that the implementation of music technology not only changed *what* was done, the content and the musical styles, but also *how* it was done, and two qualitatively different strategies, or ways of creating music were identified and described: (i) *supplementary use* in which the equipment was used as a tool for arranging the music, and (ii) *integral use* where the equipment was used from the very beginning as an integral part of the composition.

The stylistic features of the compositions showed a clear pattern. The boys produced what could be described as rap music, using the *integral use*-strategy, with a rhythm

track and rapped lyrics, that is, with ordinary singing replaced by rhythmic talk, as basic elements. The girls tended to use the *complementary use*-strategy to varying degrees, and produced songs based on melody, and harmony. However, it is difficult to decide whether this difference in ways of working is related to gender, or if it is an effect of musical training, as the subsequent interviews showed that most of the girls had formal musical training, while many of the boys had not.

There was an interesting parallel between these two musical styles and composition strategies, and hip-hop music, characterized by a male singer rapping the verses accompanied by rhythms, followed by melodic refrains sung by girls. There was also reason to believe that these different parts were created in different ways, as described. In other words, what the novice boys and girls actually did in their music making, was to predict a development in the professional artists' ways of creating music, and produce music with stylistic features similar to a style that was to capture Sweden five years later.

The pupils' holistic view of music was demonstrated in the performance of the compositions. All the groups complemented their songs spontaneously with clothing, dancing, acting and light, and thereby placed the musical and lyrical content of the songs within a unified context.

In my PhD study (Folkestad, 1996) I investigated the situated practice of young people creating music using computers and synthesisers. The aim was to describe the process of music making and how it was apprehended. In order to capture this, the following data were collected during a three-year empirical study: (i) computer MIDI-files from all compositions of the participants, developing the "save-as"-technique in order to cover the sequence of the creation processes step by step, (ii) interviews of the participants, and (iii) observations of the participants' work. In the analysis, six qualitatively different ways of creating music, divided in two main categories, *horizontal* and *vertical*, were found. In the horizontal categories composition and arranging are separate processes, whereas in the vertical categories composition and arranging are one integrated process.

The ecology of composition: A conceptual framework

To the best of my knowledge, my PhD thesis on computer-based creative music-making (Folkestad, 1996), is one of the first studies, internationally, within music and music education, to adopt a *sociocultural* theoretical framework (see Folkestad, 2012).

In understanding and explaining the situated cultural practice of creative music making – the ecology of composition – the concept of *context* refers not only to the people, features and characteristics present when it is conceived. It also involves a historical dimension – cultural and personal – which includes the experience of previous situations. The experience of a previous situation thus becomes an ingredient of the context in the new situation. This dynamic aspect of context might explain how it is possible to switch between currently non-present situations and practices in such a familiar way, as demonstrated by some of the participants in Folkestad's (1996) study. For example, when creating music in front of the computer, the experience of playing the saxophone in a brass band situates the creator. The context of the situation – creating music by digital tools – thus expands to include not only present entities, but also the experience of musical situations in the past and in the future. It follows that in this situation the participant is not primarily making computer music, but, for example, brass band music, using the computer as a tool in achieving this.

The concept of *affordances* – a core concept in our studies since the mid 1990s – has been found to be very useful in the analysis of musical creativity, not the least in understanding the different ways in which the digital tools are utilized by different individuals. "What are the affordances of the technology, and how are they perceived by the participants?" (Folkestad, 1996: 202). Moreover, there is, as I see it, a connection between Gibson's (1986) *affordances* and *mediation* as described by Vygotsky: that which is culturally and historically mediated by the tools in a situated activity also becomes the possible affordances offered to the creator (agent) as means of his/her agency (Folkestad, 2012).

This view on discerning – or imagining – the affordances of the situational context implies a definition of *creativity*, or rather of *creative action*, as the ability to perceive new affordances, or old affordances anew, and to elaborate these affordances in each situation. Thus, the meaning of *creativity* involves a relation to the surrounding context in which the human being continuously seeks new angles of approach, and practises the ability to perceive new affordances. "To expect, anticipate, plan, or imagine creatively is to be aware of surfaces that do not exist or events that do not occur but that

could arise or be fabricated within what we call the limits of possibility” (Gibson, 1986: 255). Hence, the unique contextual conditions for each situation, together with the ability to perceive and elaborate new affordances, form the process as well as the result of creativity within each situation. This implies that the noun *creativity* is replaced with the verb *to create*, and our studies have investigated how people *act creatively* in certain situations and contexts.

In Folkestad (2004) I summarized this relation between creative actions, such as music composition, and the concept of affordances as follows:

The creative music making takes place in a process of interaction between the participants’ musical experience and competence, their cultural practice, the tools, the instruments, and the instructions – altogether forming the *affordances* in the creative situation. (pp. 87–88)

The aim of the following sections is to suggest a conceptual framework which should help in the analysis and understanding of issues regarding composition and creative music making, in general, and by the means of digital tools, specifically.

I start by presenting and discussing *intertextuality*, the process of which is a general prerequisite for the connection or link between something already known and something new, a fundamental process in all musical activities.

I continue by presenting the concept of the *personal inner musical library*, previously described in Folkestad (2012, 2013), which in short constitutes a person’s individual archive and intrapersonal resources in the musical intertextual processes, and as such also constitutes the foundation of the personal musical identity.

Finally, I present and discuss *discourse in music*, a concept introduced by Folkestad (1996) and further developed in Folkestad (2012, 2013) in order to analyse and understand the interpersonal processes of interaction and negotiation in musical activities on collective levels, including the negotiation and formation of new musical identities.

Intertextuality

Issues regarding the relationships between previous knowledge and experiences and the formation of new knowledge are at the core of all educational sciences, and

music education is no exception. The same is true of all musical activities, including the creation of music, and in the formation of musical identities.

From this perspective, the theories of *intertextuality*, originating in writings on literature and linguistics, become particularly interesting in the analysis of the relationships between different texts – adopting a widened text concept, including all kinds of “texts” such as music, visual art, theatre, body movement, etc.

Dyndahl (2013) references Barthes (1977) and Kristeva (1980), who state that intertextuality is everywhere and that all texts are related to each other. This new approach to the analysis of “texts” is described by Dyndahl (2013) as follows:

Instead of analyzing the intrinsic meaning of a text, scholars would now examine its intertextual connections with other texts. In addition, texts would be considered as multiple plays of meaning, rather than as consistent messages. The individual text loses its individuality; texts are instead seen as manifestations of a text universe without clear boundaries between singular texts. (p. 2)

Barthes (1986) argues that a text is “a multi-dimensional space in which a variety of writings, none of them original, blend and clash” (p. 146). He continues by suggesting that “the text is a tissue of quotations drawn from the innumerable centres of culture” (p. 146). Moreover, Barthes (1986) states that traditionally the explanation of a piece of art has been sought in the person who did it, whereas from the perspective of intertextuality “it is language which speaks, not the author” (p. 143). He continues by arguing that writing is “to reach that point where only language acts, ‘performs’” (p. 143), and not the author. In contrast to the traditional view, “the author is never more than the instance writing...[and]...the modern scriptor is born simultaneously with the text” (p. 145).

Fiske (1987) states that “the theory of intertextuality proposes that any one text is necessarily read in relationship to others and that a range of textual knowledges is brought to bear upon it” (p. 108). He continues by arguing that “these relationships do not take the form of specific allusions from one text to another and there is no need for readers to be familiar with specific or the same texts to read intertextually” (p. 108). On the basis of this he concludes that “intertextuality exists rather in the space *between* texts” (*italics in original*) (p. 108).

Middleton (2000) concludes that “the best umbrella term for the popular music practices...is probably intertextuality” (p. 61). He notes that “digital technology... offered a radically new compositional setting, one that seemed to signal that works were now always works-in-progress, and that music was just material for reuse” (pp. 61–62). Today, this development has reached a point where “from here [the ‘re-mix culture’], it is a short step using recordings as raw material; through sampling, scratching, talkover and live mixing techniques the record becomes an instrument of performance” (p. 78).

From the definitions proposed above we might reach a definition of intertextuality in musical contexts as all kinds of relationships, implicit and explicit, between different “texts”, including music, visual art, theatre, body movement, etc. in the process of creating, interpreting, performing and listening to music.

The sampling culture (Dyndahl, 2005) enables today’s young listeners of hip-hop get to meet older songs and artists. In this way, I would argue, the samplings of older songs by hip-hop artists, which then serve as elements in their contemporary compositions, have brought not only older genres and styles into their music: this process has also implicitly contributed to the informal music education of young people of today. Through the sampling culture of hip-hop music they have been introduced to earlier music styles and artists – often described in curricula of formal school music as an important objective for music teachers to achieve – and then with the help of their extensive knowledge of how to use computers, the Internet, web sites and products such as iTunes and Spotify, they have been able to trace back the origins of the intertextual elements, thus finding their ways ahead to new musical experiences.

In Folkestad (2008) I described this music teachers’ task of bridging the already acquired knowledge of students with new musical experiences and knowledge as follows:

Using the original meaning and function of the word *pedagogue* as a metaphor (in ancient Greece the *paidagōgos* was the slave who met the student at the doorstep of his house and followed and guarded him on his way to school), what we should do as music educators is to meet the students where they stand, musically and elsewhere, but then not stop there, but take them by the hand and lead them on a journey of new musical endeavours and experiences. (p. 502)

As I see it, this task of music education is implicitly and unconsciously executed and performed by the sampling hip-hop artists in their creation of music in which intertextuality is at the core of both the processes of composition and listening. Their songs thus become intertextual resources for their “students” further musical learning.

In the following section, I will present and discuss a concept that has been developed in order to understand and discuss the *intrapersonal resources* of intertextuality in musical activities, and in the formation of musical identities: *the personal inner musical library*.

The personal inner musical library

As a tool for understanding and illustrating the relationship between previous musical experiences and musical activities, such as the compositional process or the formation of musical identities, Folkestad (2012, 2013) suggests the coining of a new concept: *the personal inner musical library*. In short, *personal* refers to Polanyi’s (1958) thesis that all knowledge is personally acquired and unique. *Inner* indicates that the musical library is not an ordinary collection of recordings and musical scores – which by tradition is understood as a musical library – but comprises all the musical experiences of a person’s mind and body. The word *library* points to how all musical experiences, just like all recordings, scores and books in an ordinary musical library, are present and accessible even when they are not explicitly in focus. They may be brought to the forefront and referred to on demand, when the need or wish arises. *The personal inner musical library (PIML)* thus illustrates that, while individual musical compositions and performances might draw on specific musical experiences, the full musical library still forms and functions as a backdrop of implicit references to the totality of musical experiences in the process of musical creation. This refers to all the musical creations and performances of that individual, as a *tacit dimension* (Polanyi, 1967) of the musical and compositional process.

The concept of PIML originates from observations in empirical studies on composition and creative music making from Folkestad (1996) onwards, in which informants described their musical resources in the creative process in terms of general statements such as “all I’ve ever heard before” and more specific ones like “the really catchy children’s songs one’s been brainwashed with since early childhood”.

At first sight, the description above of the *personal inner musical library* (PIML) might appear to have similarities with descriptions made by other scholars, for example Ruud (1997) and DeNora (2000), of the relationship between musical experiences and identity. Ruud (1997) investigates the meaning and function of music in the formation of identity and DeNora (2000) investigates the role of music in people's everyday lives with a special focus on its uses and powers in social life. However, there is an important difference between these approaches and descriptions compared to that of the PIML: while Ruud and DeNora investigate and describe the relationships between music and the formation of identity and music and everyday life respectively, that is, *the relation between music and phenomena outside the music*, I investigate and describe by PIML *the relation between music and music itself*, that is, between previously heard and experienced music, and new music being created.

In the process of musical creativity, the composer establishes a constant intertextual dialogue with his/her *personal inner musical library*, that is, as described above, with all previous musical experiences of that individual, all the music ever heard, collected and stored in the mind and body of that person. Applying Barthes' (1986) ideas of intertextuality to composition, the only power of a composer is to mix elements from previous compositions knowing that "the inner 'thing' he thinks to 'translate' is itself a ready-formed dictionary, its words only explainable through other words, and so on indefinitely" (p. 146).

In that respect, in this interactive process of composition, the first receiver of the musical message, and the first to assess the composition, is the composer herself/himself. The composition process incorporates two basic phases: (i) the creative, subjective-intuitive phase, or state of flow (Csikszentmihalyi, 1990), in which new musical material is produced, and (ii) the evaluation of that material on the basis of knowledge and previous experiences, the context of the composition, with the parts always simultaneously related to the whole, and with the *personal inner musical library*, with its collective cultural and historical dimension, as the reference.

Similarly, in the process of musical creation and performance, *intertextuality* is manifested in two different ways: (i) on an intrapersonal level in the ongoing creation of a new piece of music, in which the creative ideas of the new piece are constantly interacting with the personal inner musical library of the creator(s), and (ii) when the piece of music is performed and is thus being re-created by the listener(s).

This also implies, in line with Vygotsky's (1930/2004) view that creativity increases with experience, that the more musical experiences – intertextual resources – that exist in the personal inner musical library, the more references and resources are available for creative musical actions:

The creative activity of the imagination depends directly on the richness and variety of a person's previous experience because this experience provides the material from which products of fantasy are constructed. The richer a person's experience, the richer is the material his imagination has access to (pp. 14–15)

In summary, the *personal inner musical library* is the intrapersonal intertextual resource in musical activities such as composition and music making, in the processes of which intertextuality appears between new ideas and existing pieces of music by other composers, as well as previous music of one's own. It is also the resource and backdrop against which new musical identities are reconfigured and negotiated.

When individuals are interacting in collective musical activities, the personal inner musical libraries of the participating individuals constitute the resources or archives of musical experience and knowledge that meet and interact on the *interpersonal* activity level of *discourse in music*. In the following section this concept will be presented and discussed.

Discourse in music

Folkestad (1996) introduced a new concept – *discourse in music*, which was further elaborated and presented in Folkestad (2012, 2013). Its essence is the assumption that music itself might be regarded as a discourse – musical actions and activities, including the formation of musical identities, are seen as discursive practices and discursive activities.

The point of departure is *discourse*, “language in use”, implying that for a conversation between people, an agreed meaning of the words is required. Wittgenstein (1967/1978) states that no words have any meaning in themselves, but are defined by the context in which they are uttered. The same applies to music, which like language, is connected to practice: literal as well as musical expressions which are adequate

and which make sense in one practice might be incomprehensible in others, and discourse in music has developed differently within various musical practices. Thus, *discourse* marks a view of language and other forms of human utterances and ways of communicating as what is used during an ongoing process, rather than as a static code that can be analysed separately from its social practice.

Although *discourse* is mainly associated with talk, the concept of discourse also includes non-verbal forms of dialogue such as music, body movement, gestures etc. Thus, wider definitions of *discourse* emerge, which include all forms of human communication and negotiation in situations of practice.

The concept of *discourse in music* points to the fact that there is an intertextual level in music, in which people relate to and converse/interplay in dialogue with the personal inner musical library. Young people of today, by listening, and sometimes by playing, have built up knowledge and familiarity with different forms of musical expression, usually called styles or genres, and may thus be able to express themselves within these musical languages in various musical practices. One result of music being a historically and collectively defined object is that every composer, whether professional or novice, has a dialogue with his/her personal inner musical library in which the music also mediates the societal, traditional, national, cultural and historical features of the *discourse in music*, the musical language in use.

One of the challenges in defining *discourse in music* is to describe its similarities and differences as compared with *genre*. Fiske (1987) states that the “the most influential and widely discussed form of horizontal intertextuality is that of genre” (p. 109) and points out that “genre works to promote and organize intertextual relations” (p. 114). He defines genre as “a cultural practice that attempts to structure some order into the wide range of texts and meanings that circulate in our culture for the convenience of both producers and audiences” (p. 109). He continues by arguing that “conventions are the structural elements of genre...[and that]... conventions are social and ideological” (p. 110). This statement has much in common with the descriptions of discourse, as has Fiske’s statement that “genres are popular when their conventions bear a close relationship to the dominant ideology of the time” (p. 112), where “the dominant ideology” is presumably equivalent to the dominant discourse.

In the context of television culture, including cop shows, sitcoms and soap operas, Fiske (1987) states that “a genre seen textually should be defined as a shifting provisional set of characteristics which is modified as each new example is produced” (p. 111). I

would argue that this definition has its origin in the Ancient Greek dramas, and has been transformed through history via *Commedia dell'arte*, Shakespeare plays, and operas, to give a few examples. In music, the historically grounded genres and musical practices might be described as different discourses in music.

Hall (1993) describes the “black” discourse in black popular culture as follows:

In its expressivity, its musicality, its orality, in its rich, deep, and varied attention to speech, in its inflections toward the vernacular and the local, in its rich production of counternarratives, and above all, in its metaphorical use of the musical vocabulary, black popular culture has enabled the surfacing, inside the mixed and contradictory modes even of some mainstream popular culture, of elements of a discourse that is different – other forms of life, other traditions of representation. (p. 109)

Hall (1993) describes the origin of this black discourse, in which black people “have found the deep form, the deep structure of their cultural life in music” (p. 109) as “selective appropriation, incorporation, and rearticulation of European ideologies, cultures, and institutions, alongside an African heritage” (p. 109), which led to “linguistic innovations in rhetorical stylization of the body, forms of occupying an alien social space, heightened expressions, hairstyles, ways of walking, standing, and talking, and a means of constituting and sustaining camaraderie and community” (p. 109). He concludes by stating that “it is this mark of difference *inside* forms of popular culture ... that is carried by the signifier ‘black’ in the term ‘black popular culture’” (p. 110, italics in original).

Similarly, other cultural discourses, including specific discourses in music have emerged, and are constantly emerging when people encounter and interact with different cultural and musical traditions and expressions. However, the new music produced and performed must always be heard and understood “not simply as the recovery of a lost dialogue bearing clues for the production of new musics ... but as what they are – adaptations, molded to the mixed, contradictory, hybrid spaces” (Hall, 1993: 110). In other words, the new music being produced is *based on* a discourse in music, at the same time as it is *developing* that particular discourse in music.

As seen above, as compared with genre, tradition and style, discourses create meaning and sense, are hierarchical, and have a normative and evaluative function. The discourse works on both macro and micro levels – simultaneously constituting and constituted

– and also operates on both an individual and collective level in all kinds of musical discursive practices including music education (Nerland, 2003; Lindgren, 2006).

As described above, Kristeva (1980) argues, in line with Barthes (1977), that everything reveals intertextuality in the sense that all texts are related to previous texts. This statement has, in its character, very much in common with the statement that “everything is discourse” (Laclau & Mouffe, 1985: 110). On an overarching and simplified level it might also be argued that discourse presupposes intertextuality, and vice versa. However, even though intertextuality and discourse analysis have much in common, I perceive some essential differences. Intertextuality focuses on how the texts, as such, are related to each other: instead of regarding the author as an independent freestanding individual or subject, and his/her text as a new original creative product (Barthes, 1986), intertextuality describes how no text is essentially new, but that all texts stand in a relation to earlier texts by being either a new combination of fragments and parts of previous texts and/or an answer and continuation of what has been presented and argued in previous texts (Bakhtin, 1981).

Accordingly, where intertextuality focuses on texts’ relationship to each other, discourse focuses on the use of language in different situations, contexts and practices, which includes a focus on the relationship between different discourses. Thus, core aspects of discourse which I have not found in the descriptions of intertextuality, are *power relations* and *the exertion of power functions*.

The future: copy-write and write to copy

All the levels of interactive and intertextual processes described above presuppose a common agreement of discourse in music, the musical language in use in a certain musical discursive practice. Moreover, these interactions imply the meeting of the personal inner musical libraries of the people involved.

As seen from the presentation above, intertextuality might be regarded as a core element in all learning and creational processes. From this perspective, the idea in some national music curricula of a collective cultural heritage forming a common national identity might be interpreted as an ambition to establish a common foundation of intertextual resources for all children in schools, regardless of their national, ethnical and cultural background.

On an epistemological level, it might be argued that intertextuality is a prerequisite for all learning: if the construction of knowledge requires that the new is connected to something already learnt, acquired and assimilated, this connection rests on intertextuality. This implies that intertextuality might be a powerful pedagogical tool – the already known and the introduction of new intertextual references become the point of departure for knowledge formation on the “journey of new musical endeavours and experiences” (Folkestad, 2008: 502).

Today, the sampling culture has spread to, and has been adopted/adapted by almost every area of artistic and creative activity all over the world. This occurs increasingly without the original author, composer or artist being explicitly acknowledged or paid.

The theories of intertextuality and the “death of the author” (Barthes, 1986) imply that most traditional roles and identities of creative artists are under constant reconfiguration and negotiation. In the context of composition and music-making, this development has implications and consequences for the identities of being “a composer”, “a producer”, “a sound engineer”, “a musician”, etc. It has been argued, on the basis of the established values of authorship and distribution of royalties, that “copyright” does not mean the “right to copy”. However, for the new generation of creators and receivers acting in a global intertextual musical arena, i.e. for the *homo sampliens* (Folkestad, 2013), for which “stealing” is regarded more as an acknowledgment of the original creator than as a theft, this distinction between “copyright” and “right to copy” might be decreasingly valid. From what we have seen so far, this change in attitude and approach might continue to the point where “copyright” is *replaced* by “right to copy”, both in practice and by law. For that to happen would mean “the death of the composer”: that the whole idea of copyright, royalty and authorship, which has been regarded as the historic foundation on which future developments rest, turns out to be a historic parenthesis which survived for 300 hundred years, starting at the beginning of the 18th century with the printing and selling of scores, and with its final death struggle in front of our eyes today. In other words, the dominant discourse of copyright and royalty might be replaced by a new discourse of open access. This development would also include the formation of new *discourses in music*.

In the case of music, this development implies that your *personal inner musical library* is now free to be used not only as a reference, but as an open-access archive from which any parts or elements might be retrieved and used as material in new original compositions. Whether this can be regarded as good news or bad news is beyond the scope of this presentation. However, I think we can all agree upon the fact that for all

these new means of creative musical activity – in which we *copy-write* and *write to copy* – *intertextuality* is not only a prerequisite, but a fundamental and indispensable quality for the process of creation.

Concluding remarks

Digital music technology with samplers, computers, iPads, smartphones, the internet and “social media” has implied a democratization of creative music making, in respect to, for example, social class, gender, generations, economic prerequisites, ethnicity and cultural backgrounds.

As a result, new paths of musical learning have emerged in which children and young people of today start by creating their own music, and then, later in life, continue by learning how to play an instrument. In contrast to the traditional path, where one starts by learning how to play an instrument and then, eventually, continues by composing music of one's own. What are the implications for music education from this “shift of paradigm”?

We also know that even very small children listen to symphonic music in movies and computer games, at the same time as pensioners are singing in rock and pop choirs.

On the basis of what has been presented above I conclude by formulating two “bring home”-questions: In which landscape of music education are we now? And what will the future landscapes of music education look like?

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Professor, PhD
Göran Folkestad
Malmö Academy of Music, Lund University
Box 8204, SE-20041 Malmö
Sweden
goran.folkestad@mhm.lu.se
+46 70 525 55 91